WHAT IS CLAIMED IS:

1. In a photovoltaic module of the type having an array of electrically interconnected photovoltaic cells encapsulated between a transparent front panel and a back sheet by a light-transmitting ionomer, the improvement wherein said light-transmitting ionomer is a zinc-based ionomer.

2. The combination according to claim 1 wherein said ionomer is an ethylene-methacrylic acid copolymer or an ethylene-acrylic acid copolymer.

3. The combination according to claim 1 wherein said front panel is made of glass and said rear sheet is made of Tedlar.

4 The combination according to claim 1 wherein each of said cells has front and back contacts and said cells are interconnected by conductors that have been soldered in place using an acidic flux.

5 The combination according to claim 1 wherein said ionomer is the product identified as Surlyn 1705-1.

6. The combination according to claim 6 wherein said ionomer has been modified by the addition of the UV absorber identified as Chimasorb 944 and the UV stabilizer identified as Tinuvin 328.

7. The combination according to claim 1 wherein said zinc ionomer is resistant to acid chemical attack.

8. The combination according to claim 7 wherein said zinc ionomer has low water solubility and melts at a temperature of about 95 °C.

9. A photovoltaic module comprising a transparent front support sheet, a back sheet, an array of photovoltaic cells with front and back electrical contacts disposed between said front support sheet and said back sheet, a plurality of electrical conductors interconnecting said cells, said conductors being physically and electrically connected to said contacts by solder, and an ionomer encapsulant extending between and bonded to said front support sheet and said back and surrounding and bonded to said cells and said conductors, characterized in that an acidic flux residue is present at least some of the soldered connections of said conductors to said cells, and said ionomer is a zinc ionomer that is substantially inert with respect to reaction with said acid flux acid residue.

10. A photovoltaic module according to claim 9 wherein said zinc ionomer melts at a temperature of about 95 °C.

11. A photovoltaic module according to claim 9 wherein said front support sheet is a CeO-free glass that is transparent to radiation with a wavelength in the range of about 400 to about 800 nM.

12. A photovoltaic module according to claim 1 wherein said solar cells are thin film solar cells.

13. A photovoltaic module according to claim 12 wherein said solar cells are coupled to one another by monolithic connections.

14. A photovoltaic module according to claim 1 characterized by cadmium telluride solar cells.

15. A photovoltaic module according to claim 1 characterized by CIGS solar cells.

16. A method of manufacturing a photovoltaic module comprising the steps of:

(a) providing one or more strings of electrically interconnected photovoltaic cells, each cell having a front light-receiving surface and a rear surface with first and second contacts attached to said front and rear surfaces respectively, and said cells being interconnected by conductors that are soldered to said contacts;

(b) providing front and back support sheets with said front support sheet being stiff and transparent;

(c) placing a first zinc ionomer sheet in overlying relation with one surface of said front support sheet;

(d) placing said one or more strings of cells in overlying relation with at least one sheet of zinc ionomer;

(e) placing a sheet of scrim in overlying relation with said one or more strings of cells;

(f) covering said sheet of scrim with one or more additional sheets of zinc ionomer;

(g) placing said second support sheet in overlying relation with said one or more additional sheets of zinc ionomer; and

(h) heating the resulting assembly of said sheets and one or more strings of cells to a temperature in the range of about 120 °C to about 130 °C and compressing said components together under a pressure in the range of about 390 to about 400 torr, so as to cause said zinc ionomer sheets to soften enough to encapsulate said cells and conductors; and

(i) cooling said assembly so as to cause said ionomer to form a solid bond to said cells, conductors, scrim and front and rear support sheets, whereby to produce a laminated module.

17. A method according to claim 16 wherein step (h) is conducted with said assembly disposed in a vacuum laminating apparatus having a flexible wall, and the compression of the components of said assembly is accomplished by evacuating said apparatus, whereupon air is expelled from between said sheets and said flexible wall is drawn into tight compressing relation with said assembly.

18. A method according to claim 16 wherein the zinc ionomer in said module exhibits high radiation transmission in the 400 to 800 nM wavelength region.

19. A method according to claim 18 wherein said zinc ionomer is resistant to acid chemical attack.

20. A method according to claim 19 wherein said zinc ionomer has low water solubility and melts at a temperature of about 95 °C.

21. A method according to claim 20 wherein said zinc ionomer resists photoxidation and maintains high radiation transmission in the wavelength range of 400 to 800 nM.

22. A method according to claim 16 wherein said front support sheet is a CeO-free glass that is transparent to radiation having a wave-length in the range of 400 to 800 nM.